

SUPPORT FOR THE AMENDMENTS

Claims 21 is amended to delete redundant description.

Claims 21-40 are active.

No new matter is added to this application by entry of this amendment.

REMARKS/ARGUMENTS

The claimed invention provides a sheet extrudate having at least one surface which is self-cleaning and a method for its preparation. Applicants have discovered that a self-cleaning surface can be imparted to a sheet extrudate by impressing hydrophilic particles into the freshly extruded sheet which has not completely cooled and hardened. Following this particle impression and cooling of the extrudate to harden the surface and securely anchor the embedded particles, the **exposed surfaces of the hydrophilic particles** are hydrophobized by chemical reaction with silyl-type hydrophobizing agents.

In this hydrophobization process –OH or other polar nucleophilic groups on the surface of the hydrophilic particle chemically react with the silyl hydrophobizing agent to form a siloxane-type bond and thereby form a **hydrophobic surface on the particle**. In this manner, no coating or binding is formed between the particles. The claimed invention avoids the use of a binding or surface coating in order to eliminate the disadvantages associated with such a coating or binding. Applicants have described the disadvantages of applying a carrier such as an adhesive in the specification at page 2, lines 21-25 as:

“Processes in which structure-forming particles are applied to surfaces by means of a carrier – for example an adhesive – have the disadvantage that the surfaces obtained are composed of a very wide variety of combinations of materials which, for example, have different coefficients of thermal expansion, and this can lead to damage to the surface.”

The rejection of Claims 21-40 under 35 U.S.C. 103(a) over Keller et al.(U.S.2002/0016433) in view of Benoit (U.S. 4,963,388) and further in view of Baumann et al. (U.S. 6,800,354) is respectfully traversed.

Keller describes a composition for producing difficult-to-wet surfaces containing a finely divided powder whose particles have a hydrophobic surface and **at least one film-forming binder** (Claim 1).

Benoit is cited to show pressing particles into a polymer layer. However, Benoit does not disclose or suggest hydrophobizing the exposed surfaces of the applied particles as described in the presently claimed invention.

The Office has described its reason for citing Baumann as follows (Official Action dated December 1, 2008, page 2, lines 13-16):

Baumann et al. teaches **coating** a structured surface formed of bound particles, which are not highly hydrophobic, after the structured surface formation with a hydrophobic silane type **coating** in order to better repel water from the surface (col. 7, lines 10-45). (Bold added)

Baumann describes a substrate with a coating containing particles fixed to the substrate by a binder (Abstract). The binder coating can be a homogeneous layer over the structure forming particles and the particles may project at least partially out of the surface. The **surface** is hydrophobitized to form a hydrophobic coating (Col. 3, lines 48-61).

According to Baumann the binder surface coating is a vitreous material such as glass frit which is fired to melt and in the melt phase flows to enclose the particles. When cooled a hardened glass surface is formed (Col. 4, lines 4-33). A **hydrophobic layer** is then formed on the structured substrate surface (Col. 4, lines 64-67). In the formation of the hydrophobic coating (Col. 5, lines 27-28) using an organosilane, silanol groups of the coating material chemically react to form Si-O-Si bonds (Col. 5, lines 39-41; Col. 7, lines 19-23). In describing the “coating or layer forming material” (Col. 7, lines 10-11), Baumann states:

Preferably, however, the entire surface is hydrophobized. The hydrophobization includes the application of a very thin coating, which adheres firmly to the underlying surface.

In contrast, the claimed invention describes only hydrophobization of the exposed surface of the anchored microparticles (Claim 22). Applicants respectfully submit that nowhere does Baumann disclose, suggest or provide motivation that would have led one of ordinary skill in the art, at the time of the invention, to hydrophobizing only the exposed surface of the particles, as according to the claimed invention.

Applicants respectfully repeat the Office's own discussion of **"Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 in View of the Supreme Court Decision in *KSR International Co. v. Teleflex Inc.*"**

"The rationale to support a conclusion that the claim would have been obvious is that **all the claimed elements were known in the prior art** and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention.⁴³ "[I]t can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does."⁴⁴ **If any of these findings cannot be made, then this rationale cannot be used to support a conclusion that the claim would have been obvious to one of ordinary skill in the art,**" (Federal Register, Vol. 72, No. 195, page 57529) **(Bold added)**

In view of the above, Applicants respectfully submit that not all the elements claimed in the present invention are described in the combined descriptions of the cited references. Baumann only describes a hydrophobic thin layer applied to the entire coated substrate surface and not only the exposed surfaces of the microparticles.

Moreover, both Keller and Baumann describe binder coatings. In contrast, the claimed invention provides a surface which is free of a carrier or binder.

In a Precedential Opinion rendered by the Board of Patent Appeals and Interferences in *Ex parte* Whalen II (Appeal 2007-4423, Application 10/281,142) on July 23, 2008, the Board stated:

“The KSR Court noted that obviousness cannot be proven merely by showing that the elements of a claimed device were known in the prior art; it must be shown that those of ordinary skill in the art would have had some “apparent reason to combine the known elements in the fashion claimed.””

“The Examiner has not persuasively explained why a person of ordinary skill in the art would have had a reason to modify the compositions taught by Evans, Greff⁷⁶⁷, or Taki in a way that would result in the compositions defined by the claims on appeal. Therefore, The Examiner has not made out a prima facie case of obviousness under 35 U.S.C. § 103.”

Applicants respectfully submit that the Office has not explained why or how one of ordinary skill in the art, at the time of the invention, would have combined the three cited references to obtain the claimed invention. Two of the cited references require a binder and none of the references hydrophobitize only the exposed particle surface.

Accordingly, and in view of all the above, Applicants respectfully submit that the cited combination of references can neither anticipate nor render the claimed invention obvious and withdrawal of the rejection of Claims 21-40 under 35 U.S.C. 103(a) over Keller in view of Benoit and further in view of Baumann is respectfully requested.

Applicants respectfully continue to request that the nonstatutory obviousness-type double patenting rejection over U.S. 6,811,856 and the provisional rejections on the grounds of nonstatutory obviousness-type double patenting over copending Applications 10/506,993, 10/506,238, 10/506,236, 10/519,951 and 10/506,604 be held in abeyance pending identification of allowable subject in this application.

Application No. 10/506,994
Reply to Office Action of December 1, 2008

Applicants respectfully submit that the above-identified application is now in condition for allowance and early notification of such action is earnestly solicited.

Respectfully submitted,

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A handwritten signature in black ink, reading "Jay E. Rowe Jr.", is written over a horizontal line.

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